



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

(6.) That there is reason to suppose that these species are nearly extinct as living organisms; although to what extent they may have flourished in a previous epoch, and how universally have been diffused, can only be a matter for speculation, until further and more thorough investigations in this, and other localities, shall have been made.

References to Plate.

- (1.) *Surirella Baileyi*, a, V. b, F. V. n. sp.
- (2.) " *intermedia*, a, V. b, F. V. "
- (3.) " *anceps*, a, V. b, F. V. "
- (4.) " *delicatissima*, a, V. b, F. V. "
- (5.) *Actinella punctata*, nov. gen. a, V. b, F. V. c, group of frustules \times 100 d.
- (6.) *Denticula?* or *Tryblionella*, n. sp.
- (7.) *Amphora intermedia*, n. sp.
- (8.) *Navicula*, n. sp.
- (9.) *Mastogloia elegans*, n. sp.
- (10.) *Amphiprora pulchra*, Var. B. = *A. conspicua* (Greville).

These are all magnified about 500 d, excepting *Surirella delicatissima*, which is amplified to 1000 d. The Figs. from 7 to 10, inclusive, illustrate a paper on the Diatomaceæ of the Delaware River and marine localities adjacent thereto, which will be submitted to the Academy in a short time.

Synopsis of the species of *HOSACKIA*.

BY ASA GRAY.

§ 1. *SYRMATIUM*, Vogel. (*Drepanolobus*, Nutt.) Legume small, subulate or caudately attenuate, often torose, incurved or sickle-shaped, 1-4-seeded. Keel of the corolla not attenuate upwards, mostly obtuse. Claws of the petals slightly exserted or included; that of the vexillum somewhat distant from the others. Perennial herbs or suffruticose plants, or one species annual. Leaves 3-7-foliolate, with a very short petiole and rhachis. Stipules in the form of small black glands. Flowers small, in sessile or short-peduncled umbels, yellow, or sometimes whitish, often changing to reddish.

* Shrubby or suffruticose, with rigid slender branches, glabrous or glabrate, the young parts often silky puberulent, with (3-5, commonly 3) small and thick leaflets, somewhat sempervirent.

1. *H. JUNCEA*, Benth. in Linn. Trans. 17, p. 366. Shrubby, erect, bushy-branched, broom-like, with obovate, oval, or oblong leaflets, and very short peduncled few-flowered umbels; the calyx-teeth extremely short and blunt!—California. The only specimens before me are an original one of Douglas' collection, and those of Dr. Brewer, recently collected in the mountains near San Luis Obispo, in the Geological Survey of California.

2. *H. SCOPARIA*, Nutt. (under *Drepanolobus*), in Torr. & Gray Fl. *Syrmatium glabrum*, Vogel, in Linnæa, 10 (1836), p. 591. Almost wholly glabrous, shrubby, erect, 2-8 feet high, very bushy-branched and broom-like; with linear-oblong or barely oblong (obtuse or acute) leaflets, and strictly sessile umbels, which are usually crowded along the flowering branchlets, so as to form a virgate interrupted inflorescence. Teeth of the calyx subulate and acute, varying from one quarter to nearly half the length of the narrow tube. California, common from San Francisco to San Diego.

Var. *DIFFUSUS* (*H. crassifolia*, or *Drepanolobus crassifolius*, Nutt., l. c.), is a

[Dec.

decumbent, suffruticose, apparently dwarfed, less smooth form of the above species, which probably varies a good deal, according to situation and season.

3. *H. CYTISOIDES*, Benth. l. c. (*Drepanolobus cytisoides* and *D. rubescens*, Nutt. l. c.) Suffruticose, minutely silky-pubescent on the young parts, or soon glabrate, decumbent or sarmentose; with obovate, oblong, or linear-oblong obtuse leaflets, and many-flowered umbels, on a peduncle which often considerably exceeds the leaf, but is sometimes very short; the calyx-teeth about half the length of the tube, subulate aristiform and recurved! California, near San Francisco and Monterey.

** Suffrutescent or nearly herbaceous, diffusely decumbent, silvery white with appressed silky pubescence or tomentum, the branches somewhat virgate.

4. *H. SERICEA*, Benth. Silky-canescens, much branched, ascending. Leaves mostly trifoliate and subsessile; leaflets oblong-linear, or the larger ones spatulate-oblong. Umbels subsessile and few-flowered. Teeth of the calyx short or minute, in original specimens from Douglas about one-third the length of the turbinate-campanulate tube; in those recently collected by Dr. Brewer (Geol. Survey of California), very short. Flowers small, 3 lines long, yellow; the incurved apex of the keel somewhat acute. California; rare.

5. *H. ARGOPHYLLA*, Gray, Pl. Thurb. p. 316. *H. argentea*, Kellogg, in Proceed. Calif. Acad. 7, p. 38, fig. 8? Densely silky-tomentose, the long and rather simple branches decumbent. Leaves 3—5-foliate; leaflets obovate, obtuse (3—6 lines long). Umbels 8—12-flowered and with a unifoliate bract, capitate; the peduncle short, sometimes very short, occasionally longer than the leaf. Teeth of the calyx slender, about half the length of the cylindrical tube. Flowers 4 or 5 lines long, yellow, occasionally turning reddish; the broad incurved apex of the keel obtuse.—Southern and interior part of California; Thurber, Bigelow, Wallace, Newberry, &c. The specimen from Mr. Wallace has peduncles of considerable length.

Var. ? *FREMONTI*. Leaflets obovate-oblong and acute; the flowers 5 lines long; the teeth of the calyx setaceous and almost as long as the tube.—Eastern side of the Sierra Nevada. The length of the calyx-teeth varies considerably in species of *Hosackia*.

††† Herbaceous, or scarcely suffrutescent at the base, pubescent, tomentose, or glabrate, diffusely procumbent or prostrate. Leaflets 3—5, sometimes 6 or 7, not thick, not silvery-white; the petiole or rhachis not abbreviated.

† Teeth of the villous calyx slender. Plants silky or tomentose-pubescent. Semiferous part of the legume short, little longer than the calyx, canescent.

6. *H. TOMENTOSA*, Hook & Arn. Bot. Beech., p. 137, and certainly of p. 332. *Syrmatium tomentosum*, Vogel, l. c. Loosely tomentose-villous with whitish or fulvous spreading hairs. Leaflets obovate, 4—7 lines long. Umbels capitate, 6—12-flowered, and with a unifoliate bract; the peduncle sometimes hardly any, sometimes nearly equalling the leaf. Teeth of the very villous calyx setaceous subulate, fully the length of the turbinate-campanulate tube. Flowers 3 to 4 lines long, mostly turning reddish; the keel very obtuse.—California, San Francisco to Santa Barbara.

7. *H. DECUMBENS*, Benth. Silky with appressed pubescence; stems decumbent from a lignescent root or caudex, rather rigid. Leaflets cuneate-obovate, rhombic-ovate or obovate-oblong, cinereous, 4 or 5 lines long. Umbels capitate, many-flowered, and with a 1—3 foliolate bract; the peduncle distinct, but seldom equalling the leaf. Teeth of the silky-downy calyx equalling or shorter than the campanulate tube. Flowers nearly 5 lines long, apparently 1863.]

unchanging yellow; the keel somewhat produced or narrowed at the incurved apex, acutish.—Oregon and Washington Territory.

8. *H. HEERMANNI*, Durand & Hilgard, in *Pacif. R. R. Surv.* 5, part 3, p. 6, t. 4. Villous-pubescent, diffusely much branched (from a "suffruticose" base?) very leafy. Leaflets obovate, roundish, or oval-oblong, 2–5 lines long. Umbels 4–9-flowered and with a unifoliate bract; the peduncle often equalling the leaf. Teeth of the loosely villous calyx considerably shorter than the campanulate tube. Flowers 2 lines long, yellow turning purplish; the keel with a broad and very obtuse summit.—Southern part of California. Tejon Pass, Dr. Heermann. Near Los Angeles, Mr. Wallace. A very branchy and floribund species, the pubescence in kind nearly that of *H. tomentosa*, but far finer and less copious.

Var. ? *ORBICULARIS*. *H. orbicularis*, Torr. ined. Villous-downy; the leaflets almost orbicular, $1\frac{1}{2}$ to 2 lines long; and the umbel only 3–5-flowered.—Sand hills near San Francisco, California, Rev. A. Fitch. Flowers small in proportion, scarcely larger than in the next, and perhaps a form of that species,

9. *H. MICRANTHA*, Nutt., l. c., under *Drepanolobus*. Diffusely procumbent from an apparently annual root, minutely villous-pubescent, at length glabrate, slender. Leaflets mostly 5 or 6, obovate-oblong, $1\frac{1}{2}$ to nearly 3 lines long. Umbels 3–5-flowered and without a bract, short-peduncled. Teeth of the pubescent calyx not half the length of the tube. Flowers only a line and a half long; the short incurved apex of the keel obtusish. California. Here described, not from the original of Nuttall, from near Monterey, but from a specimen in Mr. Durand's herbarium, named by Nuttall, from "Catalina," probably therefore collected by Dr. Gambell. The root seems to be annual.

10. *H. PROSTRATA*, Nutt., l. c., under *Drepanolobus*. *H. decumbens*, var. *glabriuscula*, Hook. and Arn. Bot. Beech. p. 137? ex. char. Glabrate, the nascent parts minutely silky-puberulent, diffusely procumbent; the branches slender. Leaflets 5 or 7, oblong-obovate, obtuse, about 3 lines long. Umbels lax, 5–10-flowered and with a unifoliate bract, on slender peduncles exceeding the leaves. Teeth of the campanulate calyx very short. Flowers 3 lines long, yellow tinged with red. Said by Nuttall to be "suffruticose," but the specimen before me does not indicate it. Coast of the southern part of California, Nuttall.

§ 2. *EUHOSACKIA*, Benth. Legume linear, straight or nearly so, not rostrately attenuate. Keel of the corolla not falcately attenuate upwards, mostly very obtuse.

* *Subpalmatifoliae*. Petiole short or nearly wanting, bearing 3–6 crowded-pinnate or quasi-palmate leaflets. Stipules reduced to blackish glands. Peduncles 1–2 (rarely 3–4) flowered: bract unifoliate, rarely 3-foliate. Flowers yellow, turning purple. Vexillum tapering to the base, but hardly unguiculate, not distant from the other petals; keel very much shorter than the wings, straightish, narrowish; claws not exerted out of the calyx. Stems branching, from a perennial root, rigid.

† Peduncles elongated, all exceeding the leaves.

11. *H. RIGIDA*, Benth. Pl. Hartw. p. 305. Silky or cinereous-pubescent, a span to a foot high. Leaflets 3–5, crowded on a very short petiole, cuneate oblong or obovate. Teeth of the calyx shorter than the tube. Monterey, California, Coulter. I have seen no Californian specimen of this. But I now refer to it some plants which I formerly took for varieties of the next species, especially Dr. Bigelow's from Williams' River, a tributary of the Colorado on the eastern or New Mexican side, (in Bot. Whipple's Exped.

[Dec.

p. (79) 23,) one of Dr. Newberry's collection from Sitgreaves' Pass. also Thurber's, 243 and 307, from New Mexico, and perhaps Wright's, 1357; but the last is doubtful.

12. *H. PUBERULA*, Benth. l. c.; Gray, Pl. Wright, 1, p. 50; Torr. in Pacif. R. R. Surv. 7, t. 4 (bot.) Minutely appressed-puberulent. Leaflets 3—6, on a more developed petiole or rhachis, linear, lanceolate, or the lowest oblong. Teeth of the calyx attenuate, as long as the tube. Mexico, Arizona to S. W. Texas.

†† Peduncles seldom as long as the leaf, often shorter than the solitary flower, some of them reduced to nothing; the short pedicel, with the pair of black glands at the articulation, arising directly from the axil.

13. *H. WRIGHTII*, Gray, Pl. Wright, 2, p. 42. Cinereous-puberulent, bushy-branched, very leafy, *Aspalathus*-like; the 3—5 leaflets (the lowest oblong, the rest filiform-linear) crowded upon the apex of a barely perceptible petiole, appearing therefore as if palmate and sessile. Teeth of the calyx setaceous-subulate, about the length of the tube. Flower pretty large. New Mexico.

** *Veræ*. Leaves obviously pinnate; the (5—21) leaflets distributed along a more or less elongated rhachis. Peduncles bearing a few many-flowered umbel, which is usually subtended by a 1—5-foliate bract: this, however, is occasionally wanting or represented by a leaf low down on the peduncle. Vexillum on a slender claw, more or less distant from those of the other petals. Root perennial, except in one species.

† Peduncles (elongated) 2—4-flowered, occasionally 1-flowered: pedicels very short. Stipules scarious, but small or minute. Claws of the (yellow) petals a little exserted out of the tube of the calyx: keel broadly dilated upwards, very obtuse.

14. *H. LATHYROIDES*, Durand & Hilgard, in Pacif. R. R. Surv. 5, part 3, p. 6, t. 3. Low, cinereous-puberulent. Leaflets 5—7, not crowded, linear-lanceolate, acute at both ends. Bract unifoliate or sometimes wanting. Teeth of the calyx broadly subulate, shorter than the tube. California: San Joaquin River, Heermann; Los Angeles, Wallace.

15. *H. ANGUSTIFOLIA*, G. Don. ex Benth. *H. Mexicana*, Benth., in Linn. Trans. *H. longipes*, Nutt. ined. Slender. Leaflets 5—9, obovate or linear, short, often canescent beneath. Bract trifoliate at the apex of the 1—2-flowered peduncle. Teeth of the calyx slender, nearly as long as the tube. Mexico.

†† Peduncles umbellately many-flowered, mostly shorter than the leaf, bearing the bract below its apex, or a leaf lower down which represents the bract. Stipules scarious or in one species foliaceous. Flowers rather small, dull-colored, greenish-white or yellowish with purple, the keel slightly incurved, very obtuse, moderately shorter than the wings. Calyx-teeth not half the length of the tube. Leaflets 9—21, oval or oblong.

16. *H. INCANA*, Torr. in Bot. Whipl. Exped. Pacif. R. R. Surv., 4, p. 79, (23,) t. 4. Low, canescently very villous throughout; the bract near the apex of the peduncle, mostly 5-foliate. Yuba, California, Dr. Bigelow.

17. *H. STIPULARIS*, Benth. *H. macrophylla*, Kellogg, in Proc. Calif. Acad., 2, p. 123 and 126, fig. 40. Rather tall and stout, the upper part of the stem, petioles, peduncles, &c. villous, the leaflets glabrate. Stipules large and foliaceous, or the upper sometimes smaller and almost scarious. Peduncle bearing a 3—9-foliate leaf in place of a bract, much below the umbel. California.

1863.]

18. *H. CRASSIFOLIA*, Benth. in Linn. Trans. *H. stolonifera*, Lindl. Bot. Reg. t. 1977. *H. platycarpa*, Nutt. in Torr. and Gray Fl., in fruit only. Tall and stout; the stems nearly glabrous; the leaflets (9—15, thickish) minutely pubescent or soon glabrous. Bract or floral leaf mostly tri-foliate and mostly above the middle of the peduncle. Calyx-teeth very short. A pubescent variety (*H. stolonifera*, var. *pubescens*, Torr., l. c.) not only retains considerable down on the leaves, &c., but even the calyx and pedicels are pubescent. Oregon and California.

††† Peduncles usually equalling or exceeding the leaves, bearing a 4—12-flowered umbel (or the lowest sometimes only 1—3-flowered), the bract at its apex, or wanting. Stipules scarious. Flowers yellow, and partly white or rose-purple, half an inch or more long; the keel abruptly inflexed at the apex, acutish, a little shorter than the wings. Calyx-teeth at least nearly half the length of the tube. Leaflets 5—9, rarely 11.

19. *H. OBLONGIFOLIA*, Benth. Pl. Hartw. p. 305; Torr. l. c., which is appressed-pubescent, with 9—11 narrowly oblong and acute leaflets, a unifoliate bract, the calyx-teeth a little shorter than the tube, I do not possess; but it is said to be otherwise much like the next species. California; Coulter, Parry.

20. *H. BICOLOR*, Dougl. in Bot. Reg. t. 1257. *Lotus pinnatus*, Hook., Bot. Mag. t. 2913. Glabrous, rather tall, with 5—9 obovate or oblong leaflets and no bract, or rarely a small unifoliate one; the calyx-teeth about half the length of the tube. Corolla yellow, the keel often white. The bract certainly does now and then occur, as, for instance, even in my specimen of Hartweg's, No. 1698. Oregon and California.

21. *H. GRACILIS*, Benth.; Torr. Bot. Mex. Bound., t. 15. Equally glabrous and more slender than the foregoing, a span to a foot high, weak and spreading, with large stipules, 5—7-leaflet, those of the lower leaves often 3 and obovate-cuneate; the umbel subtended by a petioled 3-foliate bract; the calyx-tube scarcely longer than the teeth. Corolla with the keel and wings purple or tinged with rose-color. California.

†††† Peduncles several-flowered (or the lowest sometimes 1—3-flowered), the 1—3-foliate bract at its apex, or sometimes wanting. Stipules reduced to blackish points or glands, often deciduous. Claws of the petals slightly, if at all, exserted from the tube of the calyx: keel straightish, dilated upwards. Legumes glabrous. Leaflets not exceeding 7.

†† Flowers large, keel small, very much shorter than the ample wings.

22. *H. GRANDIFLORA*, Benth. l. c. *H. ochroleuca*, Nutt. in Torr. and Gray, Fl. Tall (1—5 feet high), softly, more or less pubescent. Leaflets 5—7, oval or oblong. Peduncles elongated. Flowers 7—11 lines long; teeth of the calyx subulate from a broadish base, shorter than or about as long as the tube; corolla yellowish or greenish white often tinged with purple. California.—Originals of Nuttall's *H. ochroleuca* and Bentham's *H. grandiflora*, now before me, are identical, both being of the less pubescent forms, with moderate-sized flowers, and the calyx-teeth about as long as the tube. The specimens which best exemplify the specific name have flowers almost an inch long, and a short and soft pubescence.

Var. ? *ANTHYLLOIDES*, Gray, in Proceed. Calif. Acad. ined. Low, a foot high or less, velvety-pubescent. Leaflets of the upper leaves, acute or pointed. Peduncles scarcely exceeding the leaves. Calyx-teeth attenuate, about as long as the tube. Corolla (7 lines long) white and purplish-red. Island of Catalina, Mr. Wallace; an intermediate form. Sta. Lucia Mountains, Dr. Brewer. A remarkable form, but in which I cannot detect characters warranting a specific distinction.

[Dec.

†† Flowers rather small, 4 or 5 lines long : keel broad, about the length of the wings. Root annual : rhachis of the leaves somewhat dilated. (A transition to the next division.)

23. *H. MARITIMA*, Nutt. in Torr. and Gray, Fl. Diffusely spreading from an annual root, minutely strigose-puberulent or almost glabrous ; stems from a span to nearly a foot long. Leaflets mostly 5, succulent, oval or obovate (4—6 lines long). Peduncles about equalling the leaves, 3—5-flowered, or the earliest 1—2-flowered. Bract, 1—3-foliate, or sometimes none. Calyx-teeth linear-subulate, rather longer than the tube. Corolla bright yellow. Santa Barbara and Los Angeles, California.—Not having any original specimens, I have before taken specimens of *H. strigosa*, Nutt. for *maritima*. But the original of the latter proves to be identical with a plant which I have received from Mr. Wallace, and recently from Dr. Brewer, which is clearly of this rather than the succeeding section, having a 4—5-flowered umbel in well-developed specimens, and the vexillum on a slender claw, remote from the wings, as in typical *Hosackia*.

*** *Unifloræ*. Leaves obviously pinnate or pinnately trifoliate ; the rhachis more or less dilated. Stipules reduced to blackish glands. Peduncles 1-flowered, (rarely 2-flowered). Claws of the petals not exerted, that of the vexillum short, and approximate to the others. Small and diffuse annuals : the flowers small, yellow, often turning rose-purple or reddish.

† Pubescent, 4—9-foliate. Keel broad, and almost straight, very blunt much shorter than the wings. Vexillum tapering into a short claw.

24. *H. STRIGOSA*, Nutt. *H. microphylla*, *nudiflora*, *strigosa*, and *rubella*, Nutt. in Torr. and Gray, Fl. Diffusely spreading or ascending, strigosely, pubescent. Leaflets linear-oblong, or obovate (1—5 lines long). Peduncles equalling or exceeding the leaves ; the bract of the apex 1—5-foliate or sometimes wanting. A very variable little annual, the forms of which I can divide into three sets ; one with the flowers 4 or 5 lines long and the peduncle bracteolate (*H. strigosa*, Nutt.) ; another with the flowers 3 or 4 lines long and the bract wanting or minute (*H. nudiflora*, Nutt.) ; and a third with the flowers (occasionally in pairs) two lines long, the bract 1—3-foliate or often wanting (*H. rubella* and *H. microphylla*, Nutt., in herb. Durand, under the name of *H. (Psychopsis) micrantha*, Nutt.). Some forms have been mistaken for *H. maritima*. California, along and near the coast and rivers.

†† Glabrous throughout, 3—6-foliate. Keel somewhat narrowed at the inflexed apex, acutish, nearly equalling the wings. Vexillum subcordate.

25. *H. PARVIFLORA*, Benth. in Bot. Reg. *Lotus micranthus*, Benth. in Linn. Trans. Pale, well marked by its perfect smoothness (or a slight pubescence on nascent parts), and the minute flowers (barely 2 lines long), scarcely surpassing the 1—3-foliate bract. Peduncle 2 to 8 lines long. The form of the keel is nearly that of *H. bicolor* and *H. gracilis*. Oregon and California.

§ MICROLOTUS, Benth., excl. sp. Legume of § 2, sometimes barely oblong. Keel of the corolla attenuated upwards, or as it were rostrate, falcate, mostly acute, equalling or exceeding the wings. Vexillum on a short claw, not distant from those of the other petals, which, moreover, are not exerted. Annuals. Leaves 1—5-foliate, the lower leaflets scattered on a more or less dilated rhachis. Stipules reduced to minute dark glands. Flowers small, (yellow, sometimes changing to orange or purple) not umbellate.

Of these following species only it is a question whether they should not be referred to *Lotus*.

† Peduncles longer than the leaves, bearing a single flower accompanied by 1863.]

a unifoliate bract. Calyx-teeth much longer than the tube, almost equaling than the corolla. Leaves subsessile, pinnately trifoliate or the upper sometimes unifoliate. (*Psychopsis*, Nutt. in Torr. and Gray, Fl.

26. *HOSACKIA PURSHIANA*, Benth. in Bot. Reg. *Lotus sericeus*, Pursh. *Trigonella Americana*, Nutt. Gen. *Hosackia unifoliolata*, Hook. *H. elata*, *floribunda*, *pilosa*, and *mollis*, Nutt. in Torr. and Gray, Fl. A wide-spread and variable species, from a few inches to a foot or more high, smoothish, or even glabrous, pubescent, or soft-villous; the leaflets varying from ovate to lanceolate. North Carolina to Nebraska, Oregon, and California.

†† Flowers subsessile and mostly solitary in the axils of the leaves, ebracteate. Corolla exceeding the calyx. Leaves 3—5-foliate; the leaflets obovate or oblong, mostly attenuate or scattered on the wing-dilated rhachis. Small, procumbent or depressed annuals.

27. *H. SUBPINNATA*, Torr. and Gray, Fl. *Lotus subpinnatus*, Lag.; Hook. and Arn. Bot. Beech. t. 8. *L. Macraei*, Benth., forma subglabra. *L. Wrangelianus*, Fisch. and Mey. *H. Wrangeliana*, Torr. and Gray, l. c., forma glabrata. Villous-hirsute or glabrate. Teeth of the calyx about the length of the tube, or scarcely longer. Legume linear-oblong, 4—7-seeded, as in foregoing species, very much exceeding the calyx. The smoothish variety, with a glabrous legume (*Lotus Macraei*, Benth.), appears different enough from the very hairy form, which is less common in California. But intermediate states abound. *Anisolotus anthylloides*, Bernh., of the gardens, appears to be a slender and procumbent form. Chili, California, and Oregon.

28. *H. BRACHYCARPA*, Benth. Pl. Hartw. p. 306, No. 1073. Softly villous with long and whitish hairs, very much branched from the base, diffuse or procumbent; the flowers rather larger than in the last; the attenuated teeth of the calyx very much longer than its tube, and equalling or fully half the length of the oblong or linear-oblong very obtuse villous 2—4-seeded legume. California, on the Sacramento, and in that region. Dr. Brewer has collected greener and luxuriant specimens of this species, approaching *H. subpinnata*, having flattish pods which exceed the calyx; but the species still appears to hold good.

* * * *Obscure Species.*

H. BALSAMIFERA, Kellogg, in Proceed. Calif. Acad. ii. p. 125, said to be very viscid and villous, and to have pedunculate umbels, is wholly unknown to me.

Synopsis of the ECHINOIDS collected by Dr. W. Stimpson on the North Pacific Exploring Expedition, under the command of Captains Ringgold and Rodgers.

BY ALEX. AGASSIZ.

The collection of Echinoids brought home by Dr. Stimpson was at first placed in the hands of Mr. James M. Barnard for identification. Other occupations having prevented him from finishing the task he had undertaken, the collection was sent to Cambridge, where it was arranged while I was engaged in cataloguing the Echinoids of the Museum of Comparative Zoology. The specimens have thus been compared with the greater part of the originals of the Catalogue Raisonné of Prof. Agassiz, which are in the collection at Cambridge. Dr. Stimpson has collected so largely that the species which had not been described before, and which are here briefly noticed, form a large addition to the number of Echinoids previously known to science. He has visited several of the localities from which the French explorers had brought to the Jardin des Plantes many of the species mentioned in the Catalogue Rai-

[Dec.